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| 10/751,477      | 01/06/2004  | Dong Jac You         | 041993-5363         | 3545             |

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MORGAN LEWIS & BOCKIUS LLP  
1111 PENNSYLVANIA AVENUE NW  
WASHINGTON, DC 20004

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| EXAMINER |
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CHEN, WEN YING PATTY

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/751,477             | YOU, DONG JAE       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | W. Patty Chen          | 2871                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

Applicant's Amendment filed Feb. 27, 2007 has been received and entered. Claims 1-20 remain pending in the current application.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4, 6, 9, 11-12, 15-16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105).

With respect to claim 1 (Amended): Lee et al. disclose in Figure 9 a liquid crystal display device comprising:

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a liquid crystal display panel (element 112);

a backlight unit having a fluorescent lamp (element 118), a reflection sheet (element 124) substantially enclosing the fluorescent lamp to reflect light emitted from the fluorescent lamp, and a bottom cover (element 138) having an end portion that is in contact with the reflection sheet to substantially surround and encase the reflection sheet; and

a chassis (element 130) supporting and affixing the liquid crystal display panel and the backlight unit.

Lee et al. failed to specifically disclose that the bottom cover is in contact with opposing sides of the reflection sheet.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form parts integral such that the mold frame 132, which is attached to the bottom cover 138, are made as a single piece, thus, the bottom cover would contact with opposing sides of the reflection sheet as shown in Figure 9. *see MPEP 2144.04[R-1]*

Since by forming the mold frame and the bottom cover as a single part would result in the same functionality but with decreased number of parts necessary for manufacturing.

As to claim 2: Lee et al. further disclose in Figure 9 that the backlight unit further comprises:

a panel-type light guide plate (element 120) having a light projection plane and a light incident plane;

a reflection plate (element 122) along a rear side of the light guide plate;

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a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 118) and the reflection sheet (element 124) at an outer side of fluorescent lamp;

at least one optical sheet (element 116) over the light projection plane of the light guide plate; and

a rectangular mold frame (element 132) receiving the reflection plate, the light guide plate, the optical sheet, and the lamp assembly therein;

wherein the bottom cover (element 138) extends from a bottom of the mold frame to an outer side of the reflection sheet.

As to claim 3: Lee et al. further disclose in Figure 9 that the reflection sheet (element 124) encloses an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlaps a portion of the light guide plate (element 120).

As to claim 4: Lee et al. further disclose in Figure 9 that the reflection sheet (element 124) has a round shape and end portions of the reflection sheet overlap a portion of the light guide plate (element 120) by a first overlap amount.

As to claim 6: Lee et al. further disclose in Column 4 lines 48-51 that the reflection sheet is formed of polyethylene terephthalate (PET).

As to claim 9: Lee et al. further disclose in Figure 9 that the end portion of the bottom cover (element 138) has a round shape.

With respect to claim 11 (Amended): Lee et al. disclose in Figure 9 a backlight unit, comprising:

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a panel-type light guide plate (element 120) having a light projection plane and a light incident plane;

a reflection plate (element 122) along a rear side of the light guide plate;

a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 118) and the reflection sheet (element 124) at an outer side of fluorescent lamp;

at least one optical sheet (element 116) over the light projection plane of the light guide plate; and

a bottom cover (element 138) extending from a rear side of the reflection plate to an outer side of the reflection sheet such that an end portion of the bottom cover extending to the outer side of the reflection sheet and is in contact with the reflection sheet to substantially surround and encase the reflection sheet.

Lee et al. failed to specifically disclose that the bottom cover is in contact with opposing sides of the reflection sheet.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form parts integral such that the mold frame 132, which is attached to the bottom cover 138, are made as a single piece, thus, the bottom cover would contact with opposing sides of the reflection sheet as shown in Figure 9. *see MPEP 2144.04[R-1]*

Since by forming the mold frame and the bottom cover as a single part would result in the same functionality but with decreased number of parts necessary for manufacturing.

As to claim 12: Lee et al. further disclose in Column 4 lines 48-51 that the reflection sheet is formed of polyethylene terephthalate (PET).

As to claim 15: Lee et al. further disclose in Figure 9 that the end portion of the bottom cover (element 138) has a round shape.

As to claim 16: Lee et al. further disclose in Figure 9 that the reflection sheet (element 124) encloses an outer side of the fluorescent lamp (element 118) except for a light exit portion of the fluorescent lamp.

With respect to claim 18 (Amended): Lee et al. disclose in Figure 9 a backlight unit for a liquid crystal display device, comprising:

- a light guide plate (element 120);
- a reflection plate (element 122) along a rear side of the light guide plate;
- a fluorescent lamp (element 118) along an outer periphery of the light guide plate;
- a reflection sheet (element 124) substantially enclosing the fluorescent lamp along the outer periphery of the light guide plate to reflect light from the fluorescent lamp to the light guide plate; and
- a bottom cover (element 138) along a rear side of the reflection plate having an end portion that is in contact with the reflection sheet to substantially surround and encase the reflection sheet.

Lee et al. failed to specifically disclose that the bottom cover is in contact with opposing sides of the reflection sheet.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form parts integral such that the mold frame 132, which is attached to the bottom cover 138, are made as a single piece, thus, the bottom cover would contact with opposing sides of the reflection sheet as shown in Figure 9. *see MPEP 2144.04[R-1]*

Since by forming the mold frame and the bottom cover as a single part would result in the same functionality but with decreased number of parts necessary for manufacturing.

As to claim 19: Lee et al. further disclose in Figure 9 that a first end portion of the reflection sheet (element 124) overlaps a portion of the reflection plate (element 122) and a second end portion of the reflection sheet overlaps a portion of the light guide plate (element 120).

Claims 5, 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Shiotani et al. (JP 2001-338512).

With respect to claim 5: Lee et al. disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but fail to specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm.

However, Shiotani et al. in Figure 5 disclose a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; column 11, line 4), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Lee et al. wherein the first overlapping amount is as taught by Shiotani et al., since Shiotani et al. teach that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Column 2, lines 43-50).



As to claim 10: Lee et al. disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but fail to specifically disclose that the space between the end portion of the bottom cover and the light guide plate is within a range of about 0.1mm to about 50mm.

However, Shiotani et al. in Figure 5 disclose a bottom cover (element 3) with a space (element C) between the light guide plate (element 5) of an amount of 0.1mm (Column 11, line 3), which is in the specified range of between 0.1mm and 50mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to produce a liquid crystal display device according to Lee et al. with the specified spacing dimension taught by Shiotani et al. so that the light leakage amount can be controlled with the gap dimensions.

As to claim 17: Lee et al. disclose all of the limitations set forth in claim 11, but fail to specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm and that the space between an end portion of the bottom cover and the light guide plate is within a range of about 0.1mm to about 50mm.

However, Shiotani et al. in Figure 5 disclose a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; column 11, line 4), which is in the specified range of between 0.2mm and 30mm and a bottom cover (element 3) with a space (element C) between the light guide plate (element 5) of an amount of 0.1mm (Column 11, line 3), which is in the specified range of between 0.1mm and 50mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Lee et al. wherein the first overlapping amount and the specified spacing are as taught by Shiotani et al., since Shiotani et al. teach that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Column 2, lines 43-50) and that the light leakage amount can be controlled with the gap dimensions of the spacing of the bottom cover.

Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Nakano (US 2003/0053008).

Lee et al. disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but fail to disclose that the reflection sheet is formed of one of a synthetic resin including one of a polymer having a high reflexivity and Ti.

However, Nakano discloses in Paragraph 0036 and Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin, which includes one of a polymer having a high reflexivity and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by Lee et al. with the reflection sheet composition disclosed by Nakano, since the use of a polymer having a high reflexivity and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

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Claims 8, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 6295105) in view of Matsuda et al. (US 2002/0167626).

Lee et al. disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but fail to disclose that the reflection sheet being formed by an extension of the reflection plate.

However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the display device disclosed by Lee et al. so that the thickness of the LCD device would be thinner by reducing two reflection layers to one single reflection layer, as taught by Matsuda et al. (Paragraph 0112).

### ***Response to Arguments***

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. Patty Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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W. Patty Chen  
Examiner  
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WPC  
5/25/07

  
ANDREW SCHECHTER  
PRIMARY EXAMINER